## 描述 / Descriptions

TO-220F 塑封封装 N 沟道 MOS 场效应管。N-CHANNEL MOSFET in a TO-220F Plastic Package.

## 特征 / Features

RDS(on)的典型值是 0.38Ω,低电容，开关速度快。

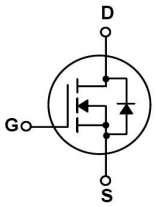
Typical RDS(on)=0.38Ω,low intrinsic capacitance $C_{iss}$, fast switching.

## 用途 / Applications

存贮管理服务,DC-DC 转换。

SMPS，DC-DC converters.

## 内部等效电路 / Equivalent Circuit




## 引脚排列 / Pinning




PIN1：G　　PIN 2：D　　PIN 3：S

## 放大及印章代码 / $h_{FE}$ Classifications & Marking

见印章说明。See Marking Instructions.

## 极限参数 / Absolute Maximum Ratings(Ta=25℃)

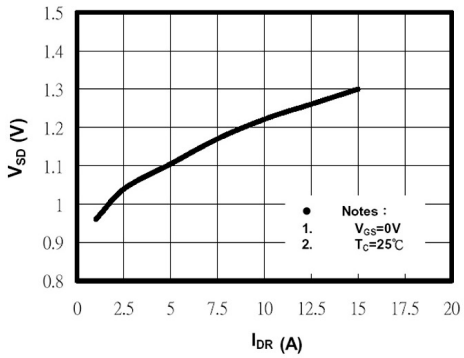
| 参数 Parameter | 符号 Symbol | 数值 Rating | 单位 Unit |
|---|---|---|---|
| Drain-Source Voltage | $V_{DS}$ | 250 | V |
| Drain-gate Voltage | $V_{DGR}$ | 250 | V |
| Gate-Source Voltage | $V_{GS}$ | ±30 | V |
| Drain Current | $I_D$(Tc=25℃) | 8.1 | A |
| Drain Current - Pulsed | $I_{DM}$ | 32 | A |
| Total Power Dissipation | $P_{TOT}$ | 30 | W |
| Insulation Withstand Voltage | $V_{ISO}$ | 2500 | V |
| Junction Temperature Range | $T_j$ | 150 | ℃ |
| Storage Temperature Range | $T_{stg}$ | -55～150 | ℃ |

## 电性能参数 / Electrical Characteristics(Ta=25℃)

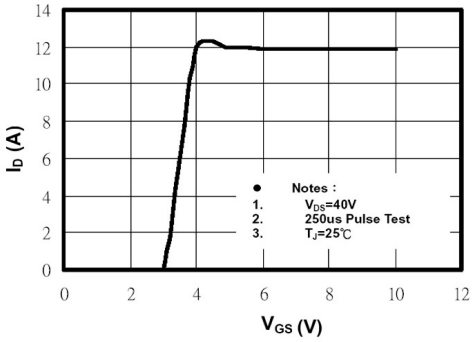
| 参数 Parameter | 符号 Symbol | 测试条件 Test Conditions | | 最小值 Min | 典型值 Typ | 最大值 Max | 单位 Unit |
|---|---|---|---|---|---|---|---|
| Drain-Source Breakdown Voltage | $V_{(BR)DSS}$ | $V_{GS}$=0V | $I_D$=250μA | 250 | | | V |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}$=$V_{GS}$ | $I_D$=250μA | 2.0 | 3.0 | 4.0 | V |
| Static Drain-Source On-Resistance | $R_{DS(on)}$ | $V_{GS}$=10V | $I_D$=4.0A | | 0.38 | 0.45 | Ω |
| Zero Gate Voltage Drain Current | $I_{DSS}$ | $V_{DS}$=200V | $V_{GS}$=0V | | | 10 | μA |
| Gate-Body Leakage Current Forward | $I_{GSS}$ | $V_{GS}$=30V | $V_{DS}$=0V | | | 100 | nA |
| | | $V_{GS}$=-30V | $V_{DS}$=0V | | | -100 | |
| Drain-Source Diode Forward Voltage | $V_{SD}$ | $V_{GS}$=0V $T_j$=25℃ | $I_{SD}$=8.1A | | | 1.5 | V |

## 电参数曲线图 / Electrical Characteristic Curve

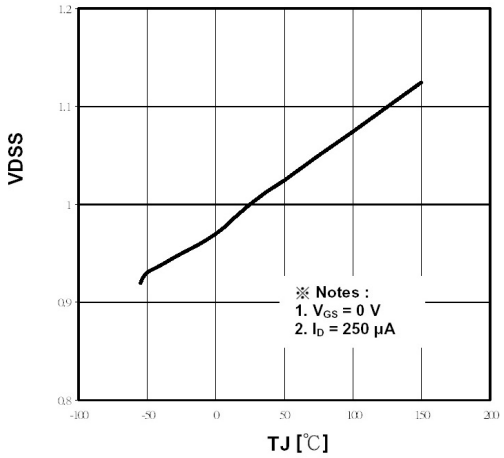
VSD – IDR



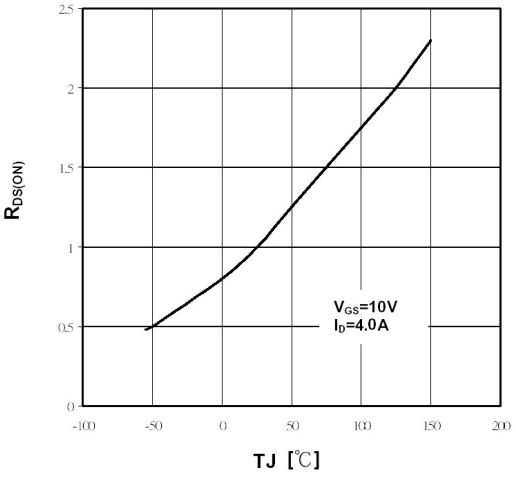

ID – VGS



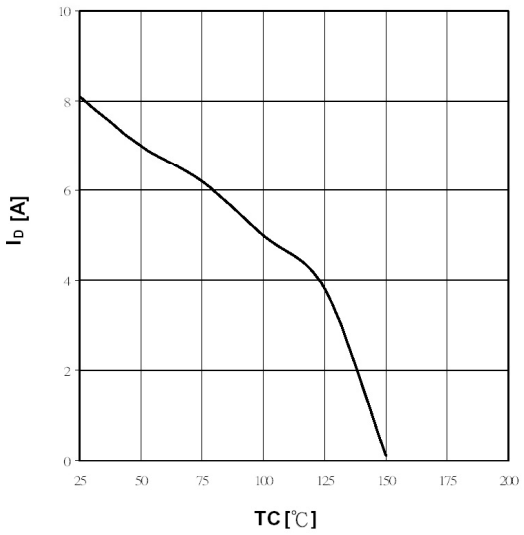

VDSS – TJ



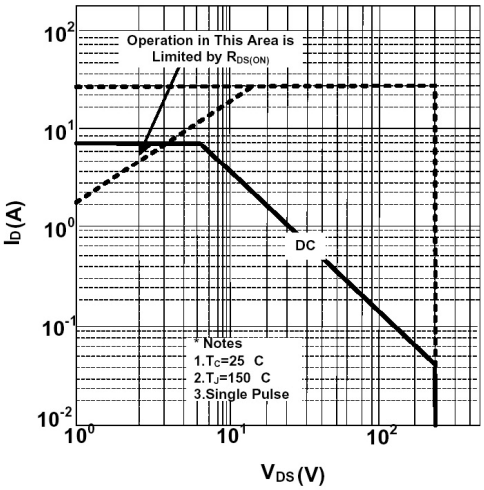

RDS(ON) – TJ




ID – TC

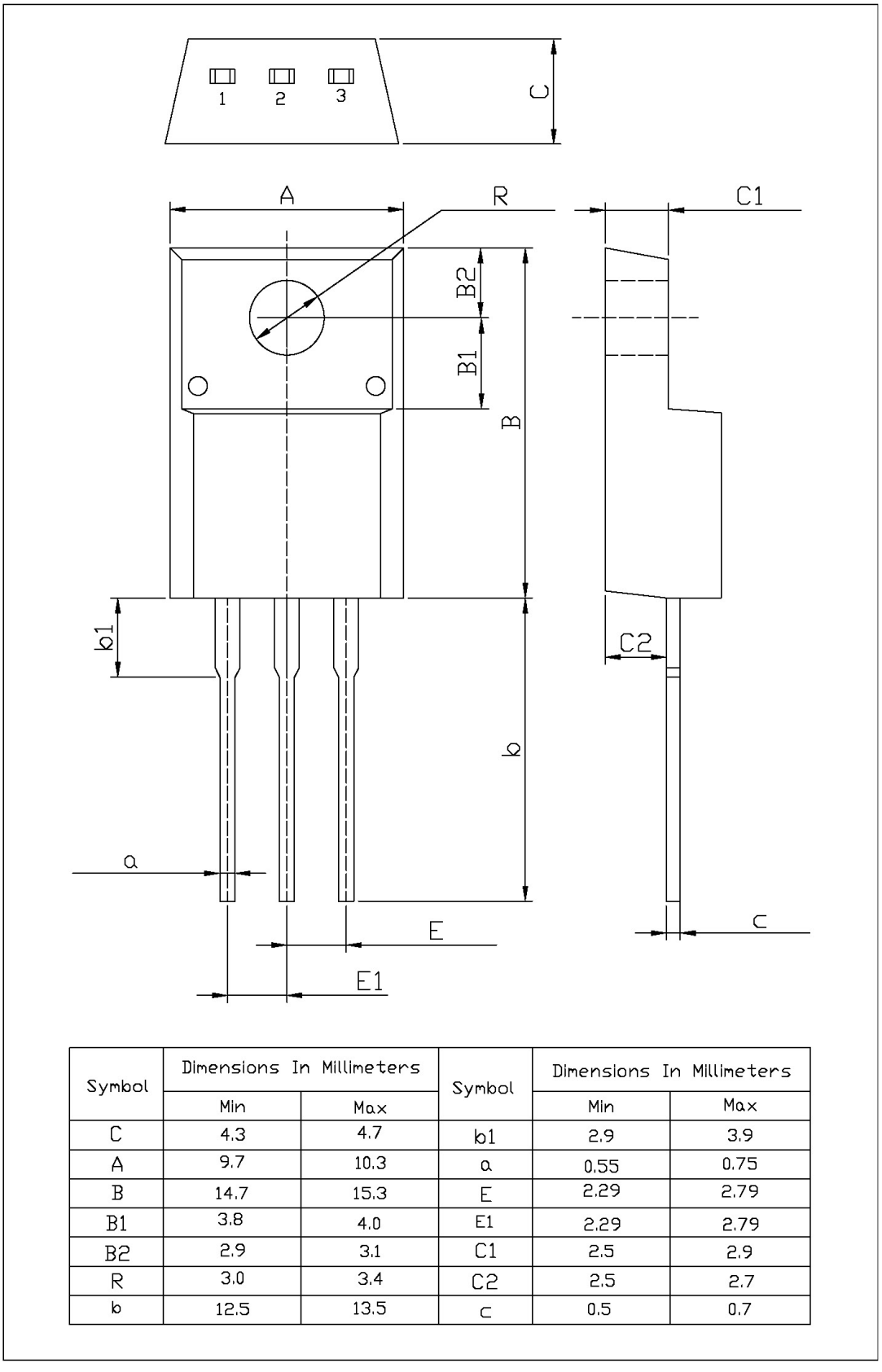



ID – VDS



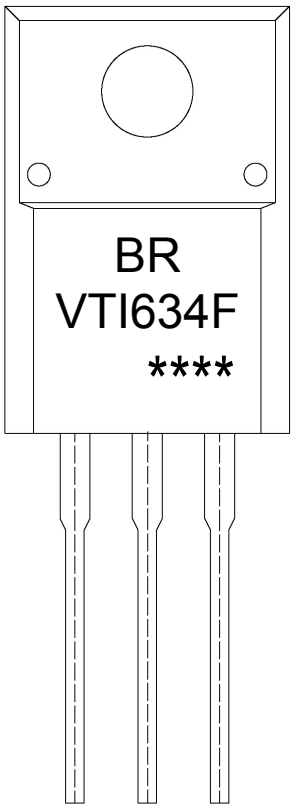
## 外形尺寸图 / Package Dimensions

TO-220F 单位：mm




| Symbol | Dimensions In Millimeters | | Symbol | Dimensions In Millimeters | |
|---|---|---|---|---|---|
| | Min | Max | | Min | Max |
| C | 4.3 | 4.7 | b1 | 2.9 | 3.9 |
| A | 9.7 | 10.3 | a | 0.55 | 0.75 |
| B | 14.7 | 15.3 | E | 2.29 | 2.79 |
| B1 | 3.8 | 4.0 | E1 | 2.29 | 2.79 |
| B2 | 2.9 | 3.1 | C1 | 2.5 | 2.9 |
| R | 3.0 | 3.4 | C2 | 2.5 | 2.7 |
| b | 12.5 | 13.5 | c | 0.5 | 0.7 |

## 印章说明 / Marking Instructions



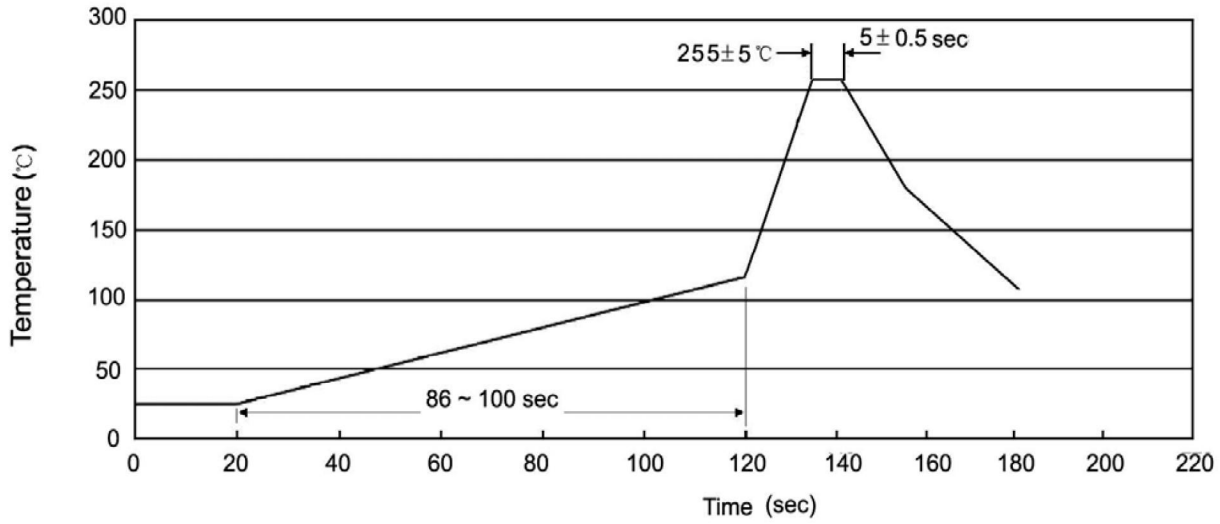

说明：

| | |
|---|---|
| BR： | 为公司代码 |
| VTI634F： | 为产品型号 |
| ****： | 为生产批号代码，随生产批号变化。 |

Note:

| | |
|---|---|
| BR: | Company Code |
| VTI634F: | Product Type. |
| ****: | Lot No. Code, code change with Lot No. |

## 波峰焊温度曲线图(无铅) / Temperature Profile for Dip Soldering(Pb-Free)




说明：

1、预热温度 25～150℃，时间 60～90sec;

2、峰值温度 255±5℃，时间持续为 5±0.5sec;

3、焊接制程冷却速度为 2～10℃/sec.

Note:

1.Preheating:25~150℃, Time:60~90sec.

2.Peak Temp.:255±5℃, Duration:5±0.5sec.

3. Cooling Speed: 2~10℃/sec.

## 耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions

温度：270±5℃　　时间：10±1 sec.　　Temp.:270±5℃　　Time:10±1 sec

## 包装规格 / Packaging SPEC.

散件包装 / BULK

| Package Type 封装形式 | Units 包装数量 | | | | | Dimension 包装尺寸 (unit: mm³) | | |
|---|---|---|---|---|---|---|---|---|
| | Units/Bag 只/袋 | Bags/Inner Box 袋/盒 | Units/Inner Box 只/盒 | Inner Boxes/Outer Box 盒/箱 | Units/Outer Box 只/箱 | Bag 袋 | Inner Box 盒 | Outer Box 箱 |
| TO-220/F | 200 | 10 | 2,000 | 5 | 10,000 | 135×190 | 237×172×102 | 560×245×195 |

套管包装 / TUBE

| Package Type 封装形式 | Units 包装数量 | | | | | Dimension 包装尺寸 (unit: mm³) | | |
|---|---|---|---|---|---|---|---|---|
| | Units/Tube 只/套管 | Tubes/Inner Box 套管/盒 | Units/Inner Box 只/盒 | Inner Boxes/Outer Box 盒/箱 | Units/Outer Box 只/箱 | Tube 套管 | Inner Box 盒 | Outer Box 箱 |
| TO-220/F | 50 | 20 | 1,000 | 5 | 5,000 | 532×31.4×5.5 | 555×164×50 | 575×290×180 |

## 使用说明 / Notices